CHAPTER 7-03.1-02
REQUIREMENTS FOR SAMPLING AND TESTING

7-03.1-02-01. Accepted tests. The following are the accepted tests to be performed on milk samples:

1. Butterfat - Babcock
   Milko Tester
   Milko Scan
   Berwind Multispec
   Gerber Test

2. Protein - Udy Protein Analyzer
   Pro-milk MK II
   Milko Scan
   Kjeldahl
   Berwind Multispec

3. Solids Not Fat - Udy
   Milko Scan
   Berwind

4. Bacteria - Standard plate count
   Direct microscopic clump count
   Plate loop

5. Somatic Cell -
   Screening: Wisconsin Mastitis Test - Eighteen millimeters
   Confirmatory: Direct microscopic somatic cell count
   Electronic somatic cell count
   Optical somatic cell count
   Membrane filter deoxyribonucleic acid somatic cell count
   Pyronin Y-methyl green stain (goats milk)

6. Coliform - Presumptive on violet red bile agar
   Confirmed with brilliant green lactose bile broth
   Petrofilm method

7. Antibiotic detection -
   Screening: Must be done with tests approved by the association

of official analytical chemists or food and drug administration.

Confirmatory: Bacillus Stearothermophilus Disc Assay or other tests accepted by food and drug administration be equally accurate and practical.

8. Phosphatase - Scharer Rapid Phosphatase Test, Rapid Colorimetric Phosphatase Method, Rutgers Phosphatase Test

9. Sediment - Mixed sample method or off-the-bottom method

10. Added Water - Thermistor Cryoscope

11. Acidity - Titratable

The dairy commissioner may approve equivalent tests other than those listed above on a case-by-case basis.

History: Effective August 1, 1986; amended effective April 1, 1993.
General Authority: NDCC 4-29-03, 4-29-04, 4-30-55.1
Law Implemented: NDCC 4-30-18

7-03.1-02-02. Standardizing requirements. All testing procedures shall conform with the requirements in the latest edition of "The Standard Methods for the Examination of Dairy Products". The results of such tests must be maintained for one year and must be made available to the dairy commissioner upon request.

History: Effective August 1, 1986; amended effective April 1, 1993.
General Authority: NDCC 4-29-03, 4-29-04, 4-30-55.1
Law Implemented: NDCC 4-30-18

7-03.1-02-03. Plant laboratories. The laboratory utilized for the sampling and testing of dairy products must meet all of the requirements for grade A laboratories as listed in the "Pasteurized Milk Ordinance" or for manufacturing grade labs as recommended in the United States department of agriculture requirements or as required by the dairy commissioner.

History: Effective August 1, 1986; amended effective April 1, 1993.
General Authority: NDCC 4-29-03, 4-29-04, 4-30-55.1
Law Implemented: NDCC 4-30-18

7-03.1-02-04. Universal sampling plan. A universal sample must be collected every time the milk is picked up at the farm. This universal sample will be an aseptically collected sample that may be used for any and all tests as required by the diary commissioner.

History: Effective August 1, 1986; amended effective April 1, 1993.
General Authority: NDCC 4-29-03, 4-29-04, 4-30-55.1
Law Implemented: NDCC 4-30-18

7-03.1-02-05. Sample reporting - Records.

1. The results of all raw milk testing done for regulatory purposes by industry laboratories must be reported to the dairy commissioner. However, all adulterants in raw producer samples must be reported immediately, and all tests above the maximum levels established by law must be reported to the dairy commissioner weekly. It is the responsibility of the licensed testers to submit all laboratory results.

2. Records on sampling, testing, or grading of milk or cream, used for the purpose of regulatory enforcement or establishing producer pay levels, must be maintained and available to the dairy department for a period of twelve months. These records must include all of the following:

   a. Producer identification number.

   b. Date of sampling, testing, or grading.

   c. Type of sampling, testing, or grading procedure used.

   d. Results of sampling, testing, or grading.

   e. Name of licensed tester, grader, or sampler conducting the procedure.

3. During the course of investigating a complaint, the plant shall provide access to all quality records which may assist in the investigation.

History: Effective August 1, 1986; amended effective April 1, 1993.
General Authority: NDCC 4-29-03, 4-29-04, 4-30-55.1
Law Implemented: NDCC 4-30-18, 4-30-37

7-03.1-02-06. Composite sampling. A composite sample used for the testing of butterfat and protein must consist of a minimum of twenty milliliters which has been made up of a representative sample from each delivery of milk or cream to the plant or cream station. A minimum of ten milliliters of milk from each delivery must be included in the composite sample. The composite sample must be maintained at a temperature of thirty-two to forty degrees Fahrenheit [0 to 4.4 degrees Celsius]. A composite sample may not be maintained for more than fifteen days and must be tested within three days after the last addition. A chemical preservative must be added to maintain the integrity of the sample. Approval for the type and concentration of the preservative must be given by the dairy commissioner upon request. If a composite testing program is being used for butterfat or protein determination, a minimum of two deliveries is required. A log is required on all composite samples maintained and available to the dairy department for a period of twelve months. This log must list all of the following:

1. Date.

2. Pickup weight of milk.

3. Producer's identification.

4. Protein or butterfat, or both, result for that composite sample.

5. Name of licensed tester performing the test.

History: Effective August 1, 1986.
General Authority: NDCC 4-29-03, 4-29-04, 4-30-55.1
Law Implemented: NDCC 4-30-18

7-03.1-02-07. Farm tank calibration. Where a dispute exists between the buyer and seller of raw milk as to the proper calibration of farm bulk milk tanks, the buyer and seller together shall recalibrate the tank. Documentation of the new calibration must be signed by both the buyer and seller and sent to the dairy commissioner.

History: Effective August 1, 1986.
General Authority: NDCC 4-29-03, 4-29-04, 4-30-55.1
Law Implemented: NDCC 4-30-18

7-03.1-02-08. Sampling equipment. All sampling equipment must comply with requirements listed in the latest edition of Standard Methods. Dial thermometer, accurate within one degree Fahrenheit [0.55 degrees Celsius]. Accuracy must be checked once during a six-month period at a temperature of forty-five degrees Fahrenheit [7.22 degrees Celsius]. The dial thermometer must be calibrated with the use of a certified mercury actuated thermometer. Certification must be obtained through the dairy department. A log of the results of each dial thermometer certified must be kept containing the same information recorded on the dial thermometer. This log must show the certification history of all dial thermometers for which the certification person is responsible for a period of one year. Each of the following must be listed on the dial thermometer:

1. Initials of the person calibrating the dial thermometer.

2. The date of calibration.

3. The date of expiration and some method of identification (owner's name or thermometer number).

History: Effective August 1, 1986; amended effective April 1, 1993.
General Authority: NDCC 4-29-03, 4-29-04, 4-30-55.1
Law Implemented: NDCC 4-30-18

7-03.1-02-09. Farm samplers for milk. Individuals licensed to sample milk at the farm shall follow the procedures listed in the North Dakota Milk Hauler and Sampler Manual.

History: Effective August 1, 1986; amended effective April 1, 1993.
General Authority: NDCC 4-29-03, 4-29-04, 4-30-55.1
Law Implemented: NDCC 4-30-18

7-03.1-02-10. Plant samplers.

1. Raw milk sampling procedures. Plant storage tanks or bulk milk tanks for storing raw milk without sampling cocks must be sampled using the same procedures described in sampling procedures for farm samplers.

2. For plant storage tanks with sampling cocks, all of the following procedures must be used:

   a. Rinse the area around the sample cock with warm water and clean if needed.

   b. Wash and dry hands.

   c. Sanitize sample cock with an approved sanitizer or equivalent. Use a minimum contact time of thirty seconds.

   d. Purge sample cock by discarding a volume of milk of sufficient quantity to remove any excess chlorine solution.

   e. Two sample containers must be labeled with the following information:

      (1) Plant name.

      (2) Date.

      (3) Time.

      (4) Temperature.

      (5) Sampler name or initials.

      (6) Tank or silo identification.

      The sample container to be used for the temperature control must also have the "T.C." notation put on the sample container.

   f. Aseptically remove the top of the bag or cap cover of the sample container for the one marked "T.C.". Fill the sample container three-quarters full, close, and place immediately in a refrigerated

sample case with a water-ice mixture capable of keeping the sample temperature at thirty-two through forty degrees Fahrenheit [0 through 4.4 degrees Celsius].

g. Sanitize an approved certified pocket dial thermometer with an approved sanitizer solution.

h. Using the dial thermometer, or tank thermometer if certified within the last six months, obtain the temperature of the milk in the sample container. Write this temperature on both sample containers.

i. Aseptically remove the top of the bag or cap of the remaining sample container and obtain a sample. Fill the sample container three-quarters full. Close and place immediately in the refrigerated sample case.

j. Rinse off all excess milk from the sample cock and storage tank or silo.

History: Effective August 1, 1986; amended effective April 1, 1993.
General Authority: NDCC 4-29-03, 4-29-04, 4-30-55.1
Law Implemented: NDCC 4-30-18

7-03.1-02-11. Finished product sampling procedures. All finished product collected for regulatory use must be collected by the dairy commissioner or the commissioner's designated representatives. Samples must be collected in a random manner and the older code date must be selected before a more recent code date.

Finished product chosen for sampling must be stored in a refrigerated sample container capable of maintaining the samples at thirty-two to forty degrees Fahrenheit [0 to 4.4 degrees Celsius]. A temperature control sample must be selected for each area or cooler where finished milk product is being stored. The temperature control must be opened and a temperature obtained using a properly certified dial thermometer. The temperature control must be closed and sealed to prevent leakage during transport. All finished samples for regulatory purposes must be taken at the plant of origin.

History: Effective August 1, 1986; amended effective April 1, 1993.
General Authority: NDCC 4-29-03, 4-29-04, 4-30-55.1
Law Implemented: NDCC 4-30-18

7-03.1-02-12. Adulterants.

1. **Drug screening.**

a. Raw milk. Prior to processing, all bulk milk pickup tankers must be tested for the presence of beta lactam drug residues and in addition must be tested for other residues as determined

necessary by the dairy commissioner. Test methods will be those approved by the association of analytical chemists or the food and drug administration. A positive confirmatory test on the commingled sample will require confirmation testing for drug residues of all individual producer samples making up the bulk pickup tanker. Bulk milk tankers testing positive must be reported to the department immediately. This report must include the tests used, volume of milk contaminated, how the milk was disposed of and which producer caused the positive residue. All milk sample residue results must be recorded and retained for examination by the department for a period of six months.

b. Bulk load rejected. If a bulk load of milk tests positive for a drug residue, the processor shall reject the entire bulk load. The rejected bulk load may not be used for human food.

c. Dairy processor may recover loss. If a dairy processor sustains a monetary loss because a bulk load of milk is rejected, the dairy processor may recover that loss from the producer or producers whose individual milk samples represent shipments in that bulk load testing positive. Recovery may not exceed the processor's loss.

d. Followup testing. If a bulk load of milk tests positive for drug residue, the processor shall immediately notify the department and suspend further pickup of milk from the producer whose milk contaminated the bulk load until followup tests of that producers milk test negative for drug residues. It is the responsibility of the dairy processor to perform followup tests.

e. Testing bulk loads. In addition to performing routine beta lactam tests, a dairy processor shall randomly test bulk milk deliveries for other drug residues as required by the department. The drug testing program shall include milk from each producer in at least four separate months during any consecutive six-month period.

f. Bacillus stearothermophilus. A reading of greater than twelve and eight-tenths millimeters but less than fifteen and eight-tenths millimeters on the bacillus stearothermophilus test of any individual producer's raw milk sample must be immediately reported to the dairy commissioner as below actionable level. A reading of sixteen millimeters or greater must be reported immediately to the dairy commissioner who shall stop milk shipments until the milk offered for sale tests twelve and eight-tenths or below millimeters using the bacillus stearothermophilus. Other tests approved by the dairy commissioner or the food and drug administration may be used.

g. Finished product. All finished grade A milk products must be tested for antibiotics monthly. Raw milk contaminated with antibiotics

may not be used in processing finished grade A products. All manufacturing grade finished milk products must be tested as determined by the dairy commissioner. These products include fluid and cultured products, butter, cheese, and other products so designated by the dairy commissioner.

2. **Producer penalties.** A person may not sell or offer for sale milk or cream which contains drug residues or other chemical substances in amounts above the tolerances or safe levels established by the food and drug administration action levels are based on tolerances or "safe levels" specified by the United States food and drug administration, and identified in the memorandum from the food and drug administration's milk safety branch, HFF-346, dated July 21, 1991. "Safe levels" are merely enforcement guidelines and do not constitute legal tolerances. They do not legalize residues found in milk that are below the "safe levels".

   a. When a producer is found to have shipped milk which tests positive for residue, that permit must be suspended for two days or equivalent penalty.

   b. When a producer is found to have shipped milk which tests positive for residue two times in a twelve-month period, that producer's permit must be suspended for a period of four days or equivalent penalty.

   c. When a producer is found to have shipped milk which tests positive for residue three times in a twelve-month period, that producer's permit must be suspended for a period of four days or equivalent penalty, and the department shall start administrative procedures to revoke the producer's grade A permit for a period of not less than sixty days.

   d. A milk producer who violates the drug residue rules shall have the permit to sell milk suspended until the milk has been sampled and found to contain no residues above safe levels. The producer will then be issued a temporary permit to sell milk for thirty days or until the producer and a licensed veterinarian have completed the milk and dairy beef quality assurance program and verification is received by the department.

   e. The drug residue prevention program under this section should conform to the milk and dairy beef quality assurance program which is endorsed by the food and drug administration.

   f. A producer may request a hearing within ten days of a suspension notice if the producer feels the department is in error.

3. **Pesticides.** Milk containing any pesticides or chemical contamination exceeding United States food and drug administration or environmental protection agency established standards for safe food may not be offered for sale.

4. **Added water.** Milk may not contain added water. Any milk testing over .530 degrees Horvet using the cryoscope thermistor test may not be offered for sale. Regulatory action must be taken on all samples testing higher than two percent added water.

History: Effective August 1, 1986; amended effective April 1, 1993.
General Authority: NDCC 4-29-03, 4-29-04, 4-30-55.1
Law Implemented: NDCC 4-30-18, 4-30-40